UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R042XA062NM

Site Name: Swale

Precipitation or Climate Zone: 8-10 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs on depressions and other low-lying landscapes that receive additional run-on from adjacent sites. Slopes range from 0 to 5 percent. Elevations range from 4,200 to 5,600 feet above sea level.

Land Form:

1. Depression
2.
3.

Aspect:

1. Not significant.
2.
3.

	Minimum	Maximum
Elevation (feet)	4,200	5,600
Slope (percent)	0	5
Water Table Depth (inches)	N/A	N/A

Flooding:	Minimum	Maximum
Frequency	Rare	Occasional
Duration	Very brief	Very brief

Ponding:	Minimum	Maximum
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

N/A

CLIMATIC FEATURES

Narrative:

This site has an arid climate with distinct seasonal temperature variations and large annual and diurnal temperature changes characteristic of a continental climate.

Precipitation averages 8 to 10 inches annually. Deviations of 4 inches or more from the average are quite common. Fifty percent of the moisture is received from July to November, which is the dominant growing season of native plants. Summer moisture is characterized by high intensity, short duration rainstorms. Winter precipitation averages less than one-half inch per month, usually in the form of rain. There are occasional snowstorms of short duration.

Temperatures vary from a mean monthly average of 77F in July to 34F in January, with the maximum being 104F and the minimum 10F below zero. The average last killing frost in the spring is April 15 and the average first killing frost in the fall is October 28. Frost-free season is an average of 185 days. Temperatures are conducive for native grass and forbs growth from March through November.

Spring winds of 15 to 40 miles per hour are common from February to June. These winds increase transpiration rates of native plants and rapidly dry the surface soil. Small soil particles are often displaced by the wind near the soil surface. This results in structural damage to native plants, especially young seedlings.

Due to the low lying position of the landscape and the resulting run-on, the soil moisture is more effective than on adjacent sites. This results in early green up and higher productivity.

	Minimum	Maximum
Frost-free period (days):	140	165
Freeze-free period (days):	190	213
Mean annual precipitation (inches):	8.00	10.00

Monthly moisture (inches) and temperature (^{0}F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	0.31	0.44	34.1	36.2
February	0.31	0.46	39.3	42.0
March	0.25	0.54	46.3	48.8
April	0.33	0.52	53.3	56.5
May	0.34	0.50	62.5	64.5
June	0.46	0.70	70.6	74.3
July	1.18	2.35	75.3	78.5
August	1.64	2.47	73.0	75.9
September	1.00	1.56	66.5	68.6
October	0.89	1.25	55.5	57.4
November	0.36	0.54	43.7	45.4
December	0.44	0.57	35.1	37.2

Climate Stations:

Station ID	NM0915	Location	Bernardo	Period From:	1962	1990
				To:		
Station ID	NM0983	Location	Bingham	Period From:	1961	1990
				To:		
Station ID	NM0234	Location	Albuquerque	Period From:	1961	1990
				To:		
Station ID	NM5150	Location	Los Lunas	Period From:	1961	1990
				To:		

INFLUENCING WATER FEATURES

Narrative:

This site is not influenced by water from wetland or stream.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:
The soils are moderately deep to deep and moderately to well drained. Surface textures range from very fine sandy loams to clay loams to clays. Subsoils are loams to clays. Permeability is medium to slow with water holding capacity generally moderate to high. A desert pavement and coarse fragments throughout the soil profile is not uncommon.

Parent Material Kind: Alluvium
Parent Material Origin: Mixed

Surface Texture:

1. Loam
2. Silty clay loam
3.

Surface Texture Modifier:

1. L
2. SICL
3.

Subsurface Texture Group: N/A
Surface Fragments <=3" (% Cover): N/A
Surface Fragments >3" (% Cover): N/A
Subsurface Fragments <=3" (%Volume): N/A
Subsurface Fragments >=3" (%Volume): N/A

	Minimum	Maximum
Drainage Class:	Well	Well
Permeability Class:	Slow	Slow
Depth (inches):	>72	>72
Electrical Conductivity (mmhos/cm):	0	4
Sodium Absorption Ratio:	N/A	N/A
Soil Reaction (1:1 Water):	7.4	8.4
Soil Reaction (0.1M CaCl2):	N/A	N/A
Available Water Capacity (inches):	7	7
Calcium Carbonate Equivalent (percent):	N/A	N/A

PLANT COMMUNITIES

Ecological Dynamics of the Site:
Future Development.

Plant Communities and Transitional Pathways (diagram)
Future Development.

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 Narrative Label: HCPC

Plant Community Narrative:
This is a grassland site with shrubs scattered throughout. Trees are not commonly found on this site. Forbs are an important component on this site.

Ground Cover (Aveage Percent of Surface Area).	
Grasses & Forbs	40
Trees (canopy)	6
Shrubs (canopy)	6
Bare ground	40
Surface cobble and stone	
Surface gravel	
Litter (percent)	20
Litter (average depth in cm.)	2

Plant Community Annual Production (by plant type):

	Annual Production (lbs/ac)		
Plant Type	Low	RV	High
Grass/Grasslike	585	1,103	1,620
Forb	33	61	90
Tree/Shrub/Vine	33	61	90
Lichen			
Moss			
Microbiotic Crusts			
Totals	650	1,225	1,800

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	PAOB	Vine mesquite	184-306	184-306
2	PLMU3	Tobosa	184-306	184-306
	PLJA	Galleta		
3	SPAI	Alkali sacaton	184-306	184-306
	SPWR2	Giant sacaton		
4	BOGR2	Blue grama	86-147	86-147
5	ELEL5	Bottlebrush squireltail	61-98	61-98
6	SCBR2	Burrograss	12-37	12-37
7	2GRM	Other Grasses	37-86	37-86

Plant Type - Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
8	ATCA2	Fourwing Saltbush	12-37	12-37
	KRLA2	Winterfat		
9	RHMI3	Littleleaf sumac	0-37	0-37
	RHTR	Skunkbush sumac		
	FAPA	Apacheplume		
	ERNAN5	Rubber rabbitbrush		
	2SHRUB	Others		

Plant Type – Forb

10	ASLA4	Broadleaf milkweed	61-123	61-123
	SAKA	Russian thistle		
	SOAM	Silverleaf nightshade		
	CRPOP	Leatherweed croton		
	SPCO	Scarlet Globemallow		
	KOSC	Kochia		
	SENEC	Threadleaf groundsel		
	2FORB	Other Forbs		

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site would include: Western wheatgrass, Mat muhly, Cane bluestem, Sideoats grama, Black grama, Indian ricegrass

Other woody plants include: Broom snakeweed, Yucca spp.

Other forbs include: Whorled milkweed, Thistles spp., Verbena spp., Spurge spp.

Plant Growth Curves
Growth Curve ID NM-2311
Growth Curve Name: HCPC
Growth Curve Description: SD-1 Swale HCPC Warm Season Plant Community

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
		3	5	10	10	25	30	12	5		

Growth Curve ID NM-2312
Growth Curve Name: HCPC
Growth Curve Description: SD-1 Swale HCPC Cool Season Plant Community

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	5	20	15	5	5	5	5	10	15	15	

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

This site provides habitats which support a resident animal community that is characterized by coyote, desert cottontail, silky pocket mouse, horned lark, ornate box turtle, New Mexico whiptail, and prairie rattlesnake.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydraulic cover conditions and hydrologic soil groups.

Hydrologic Interpretations

Soil Series	Hydrologic Group
Mimbres silt loam	C

Recreational Uses:

This site is not normally considered for its recreational value other than for nature obervation, hunting, and horseback riding. The beauty of this site may be enhanced by it proximity to a colorful setting.

Wood Products:

This site has no potential for wood products in its potential plant community.

Other Products:

Approximately 90 percent of the production on this site is suitable for grazing or browsing by domestic livestock and wildlife. Grazing distribution to adjacent sites may be a problem since grazing animals are attracted to this site because of early green up. Heavy grazing pressure during early green up, as well as trampling damage on wet soils may lead to deterioration of the potential plant community. Such deterioration is indicated by a decrease in vine mesquite, blue grama, bottlebrush squirreltail, and desireable forbs. Plants that increase include burrograss, mat muhly, broom snakeweed, and threadleaf groundsel.

A planned grazing system with periodic deferment is best to maintain the desireable balance between plant species and to maintain the natural productivity and plant vigor.

Removal of the past years growth, either by grazing or by prescribed burning will remove old plant growth and lead to increased production and palatability of the coarser grasses found on this site.

Other Information:	
Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month	
Similarity Index	Ac/AUM
100 - 76	1.9 – 2.3
75 – 51	2.2 – 3.5
50 – 26	3.3 – 7.0
25 – 0	7.0 +

Plant Preference by Animal Kind:

	Code	Species Preference	Code
Stems	S	None Selected	N/S
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruit/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Animal Kind: Livestock Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Vine mesquite	Panicum obtusum	EP	P	P	P	P	P	P	P	P	P	P	P	P
Blue grama	Bouteloua gracilis	EP	P	P	P	P	P	P	P	P	P	P	P	P
Bottlebrush sqtail.	Elymus elymoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	Pascopyrum smithii	EP	P	P	P	P	P	P	P	P	P	P	P	P
Cane bluestem	Bothriochloa barbinoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sideoats grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Black grama	Bouteloua eriopoda	EP	P	P	P	P	P	P	P	P	P	P	P	P
Indian ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Fourwing Saltbush	Atriplex canescens	EP	P	P	P	P	P	P	P	P	P	P	P	P
Winterfat	Krascheninnikovia lanata	EP	P	P	P	P	P	P	P	P	P	P	P	P
Russian thistle	Salsola kali	EP	P	P	P	P	P	P	P	P	P	P	P	P
Kochia	Kochia scoparia	EP	P	P	P	P	P	P	P	P	P	P	P	P
Tobosa	Pleuraphis mutica	EP	D	D	D	D	D	D	D	D	D	D	D	D
Galleta	Pleuraphis jamesii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Alkali sacaton	Sporobolus airoides	EP	D	D	D	D	D	D	D	D	D	D	D	D
Giant sacaton	Sporobolus wrightii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Leatherweed croton	Pottsii pottsii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Burrograss	Scleropogon brevifolius	EP	U	U	U	U	U	U	U	U	U	U	U	U
Mat muhly	Muhlenbergia richardsonis	EP	U	U	U	U	U	U	U	U	U	U	U	U
Littleleaf sumac	Rhus microphylla	EP	U	U	U	U	U	U	U	U	U	U	U	U
Skunkbush sumac	Rhus trilobata	EP	U	U	U	U	U	U	U	U	U	U	U	U
Apacheplume	Fallugia paradoxa	EP	U	U	U	U	U	U	U	U	U	U	U	U
Broom snakeweed	Gutierrezia sarothae	EP	U	U	U	U	U	U	U	U	U	U	U	U
Threadleaf groundsel	Senecio longilobus	EP	U	U	U	U	U	U	U	U	U	U	U	U
Milkweed	Ascelpias spp.	EP	U	U	U	U	U	U	U	U	U	U	U	U
Silverleaf nightshade	Solanum elaeagnifolium	EP	U	U	U	U	U	U	U	U	U	U	U	U

Plant Preference by Animal Kind:

	Code	Species Preference	Code
Stems	S	None Selected	N/S
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruit/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Animal Kind: Wildlife

Animal Type: Pronghorn

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Fourwing Saltbush	Atriplex canescens	EP	P	P	P	P	P	P	P	P	P	P	P	P
Winterfat	Krascheninnikovia lanata	EP	P	P	P	P	P	P	P	P	P	P	P	P
Apacheplume	Fallugia paradoxa	EP	P	P	P	P	P	P	P	P	P	P	P	P
Grama spp.	Bouteloua spp.	EP	P	P	P	P	P	P	P	P	P	P	P	P
Western Wheatgrass	Pascopyrum smithii	EP	P	P	P	P	P	P	P	P	P	P	P	P
Vine mesquite	Panicum obtusum	EP	P	P	P	P	P	P	P	P	P	P	P	P
Indian ricegrass	Achnatherum hymenoides	EP	P	P	P	P	P	P	P	P	P	P	P	P
Russian thistle	Salsola kali	EP	P	P	P	P	P	P	P	P	P	P	P	P
Kochia	Kochia scoparia	EP	P	P	P	P	P	P	P	P	P	P	P	P
Sumac spp.	Rhus spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Rubber rabbitbrush	Ericameria nauseosa	EP	D	D	D	D	D	D	D	D	D	D	D	D
Galleta	Pleuraphis jamesii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Tobosa	Pleuraphis mutica	EP	D	D	D	D	D	D	D	D	D	D	D	D
Alkali sacaton	Sporobolus airiodes	EP	D	D	D	D	D	D	D	D	D	D	D	D
Giant sacaton	Sporobolus wrightii	EP	D	D	D	D	D	D	D	D	D	D	D	D
Cacti spp.	Opuntia spp.	EP	D	D	D	D	D	D	D	D	D	D	D	D
Broom snakeweed	Gutierrezia sarothae	EP	U	U	U	U	U	U	U	U	U	U	U	U
Burrograss	Scleropogon brevifolius	EP	U	U	U	U	U	U	U	U	U	U	U	U
Mat muhly	Muhlenbergia richardsonis	EP	U	U	U	U	U	U	U	U	U	U	U	U

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

Inventory Data References (narrative):

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

State Correlation:
This site has been correlated with the following sites: _____

Type Locality:	General Legal Description:		
State:	Latitude:	Longitude:	
County:	Section:	Township:	Range:
Narrative Location Description:			

Is the type locality sensitive? Yes ☐ No ☐

Relationship to Other Established Classifications:

Other References:
Data collection for this site was done in conjunction with the progressive soil surveys within the Southern Desertic Basins, Plains and Mountains, Major Land Resource Areas of New Mexico. This site has been mapped and correlated with soils in the following soil surveys. Valencia, and Bernalillo.

Characteristic Soils Are:	
Mimbres silt loam	Largo

Other Soils included are:	

Site Description Approval:

{PRIVATE}Author	Date	Approval	Date
Don Sylvester	07/12/1979	Don Sylvester	7/12/1979

Site Description Revision:

{PRIVATE}Author	Date	Approval	Date
Santiago Misquez	03/03/03	George Chavez	02/06/03